

09453526-120399

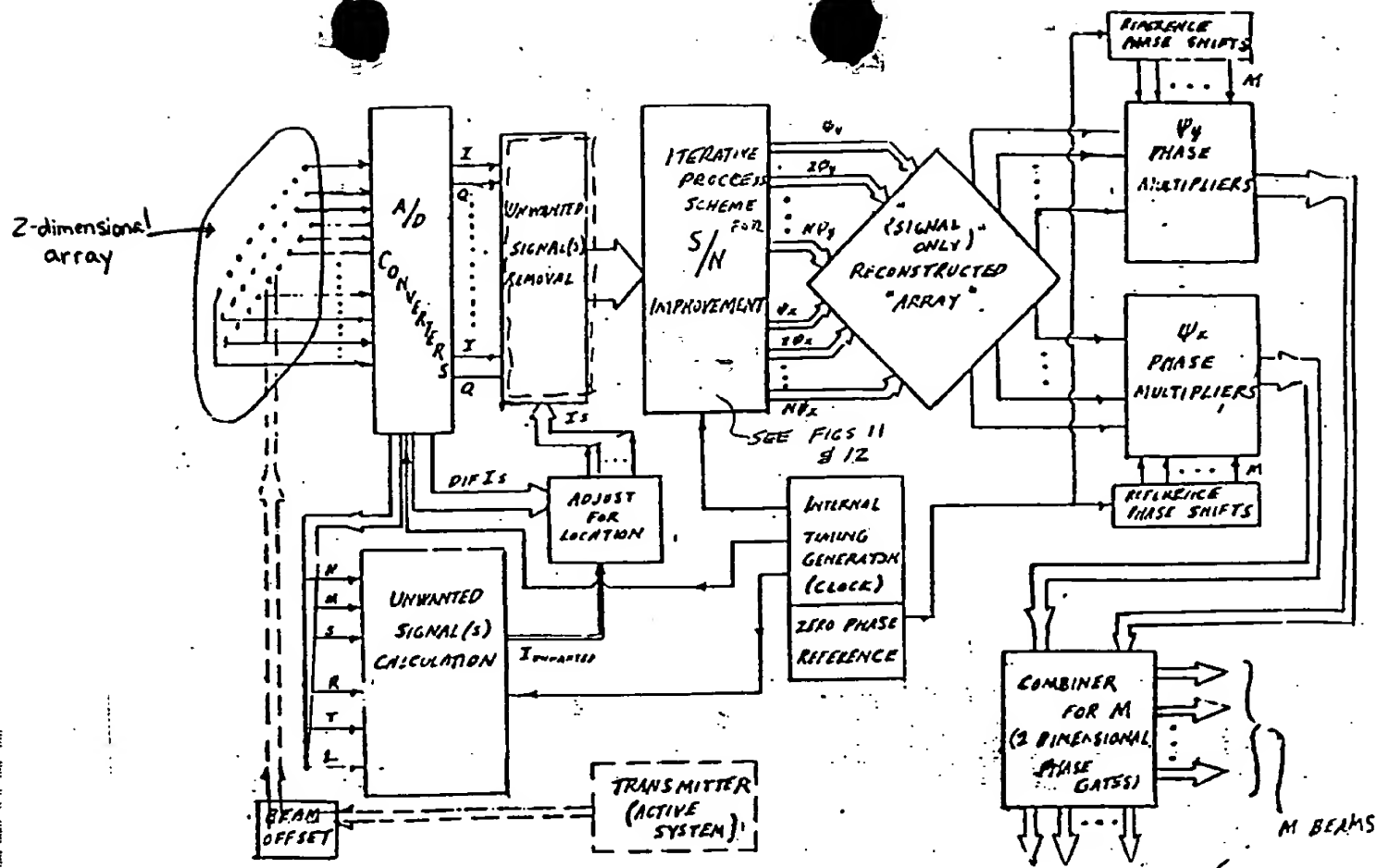


FIG 1 COMPREHENSIVE SYSTEM

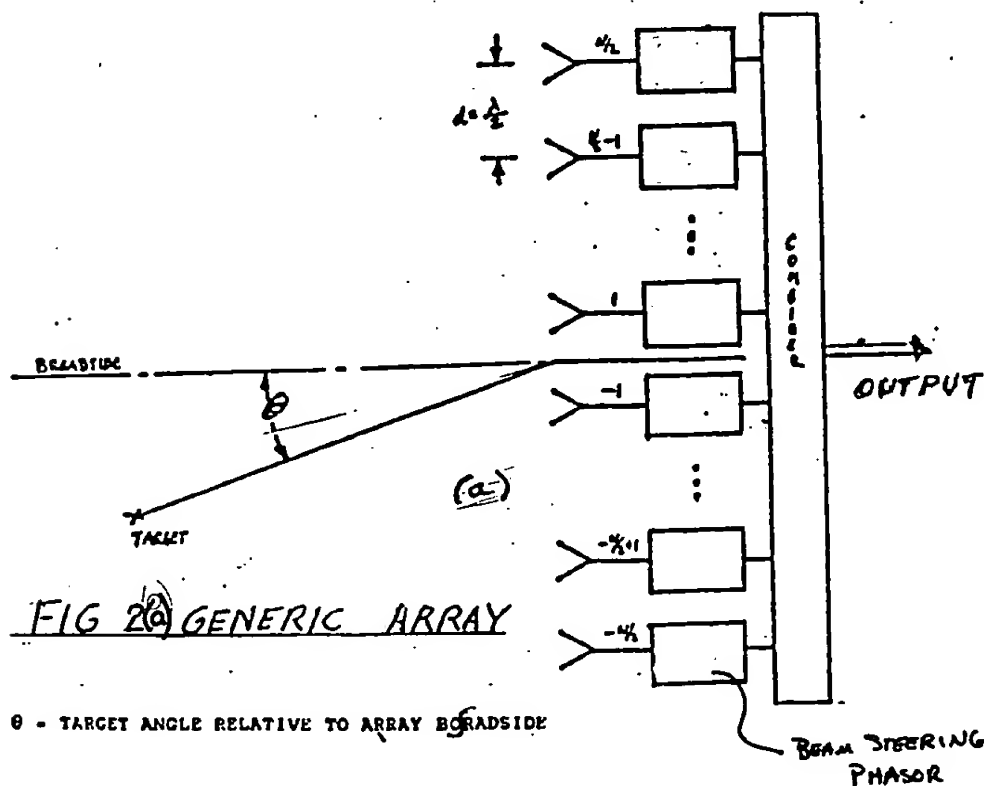


FIG 2(a) GENERIC ARRAY

θ - TARGET ANGLE RELATIVE TO ARRAY BEAMSIDE

BEST AVAILABLE COPY

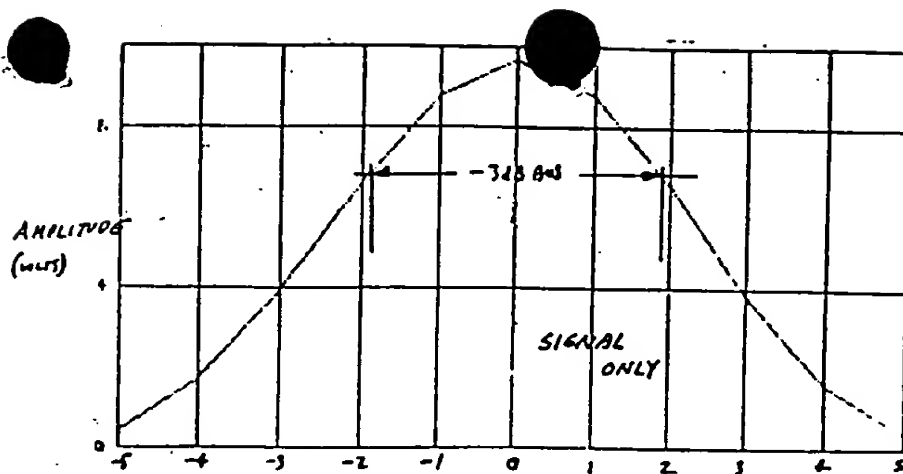


FIG 2 (b)

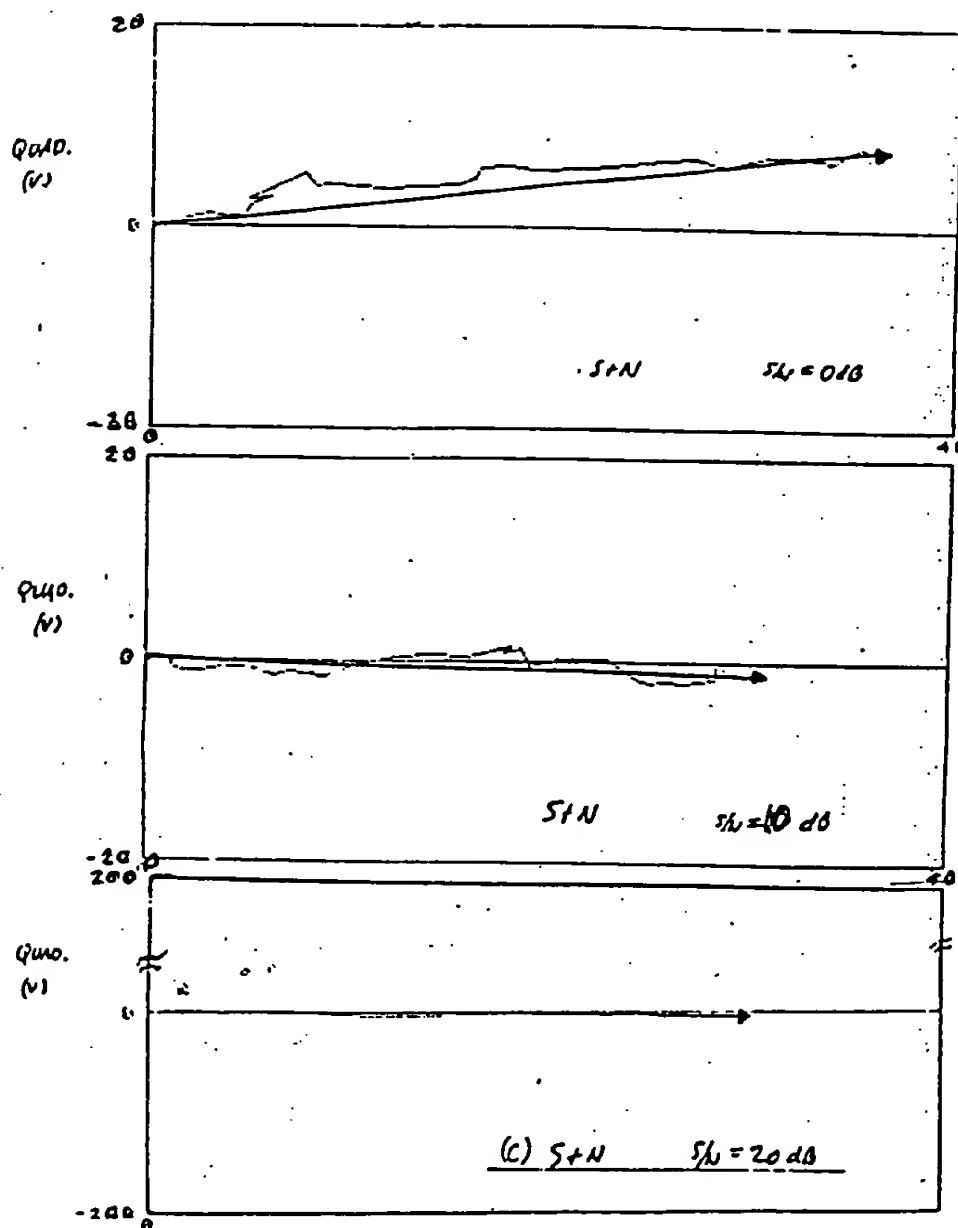


FIG 3 VECTOR RELATIONSHIPS

SECRET 9255460

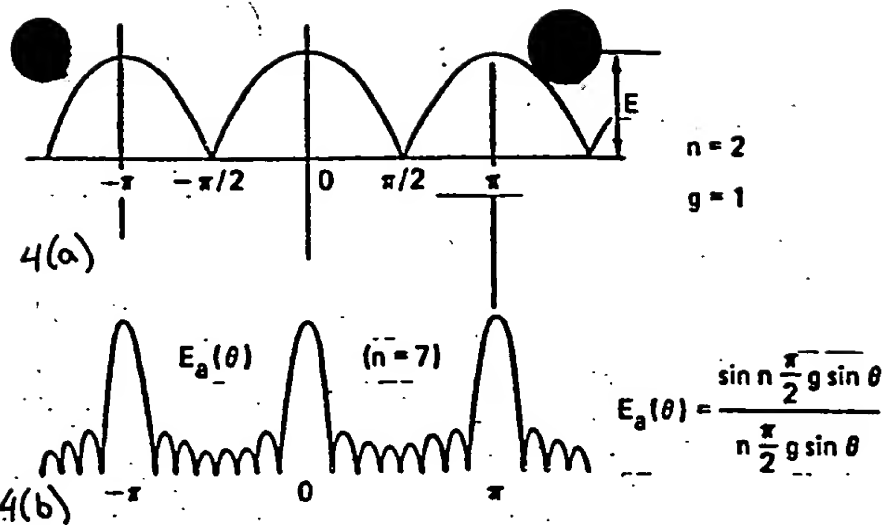


FIG 4. ARRAY FACTORS

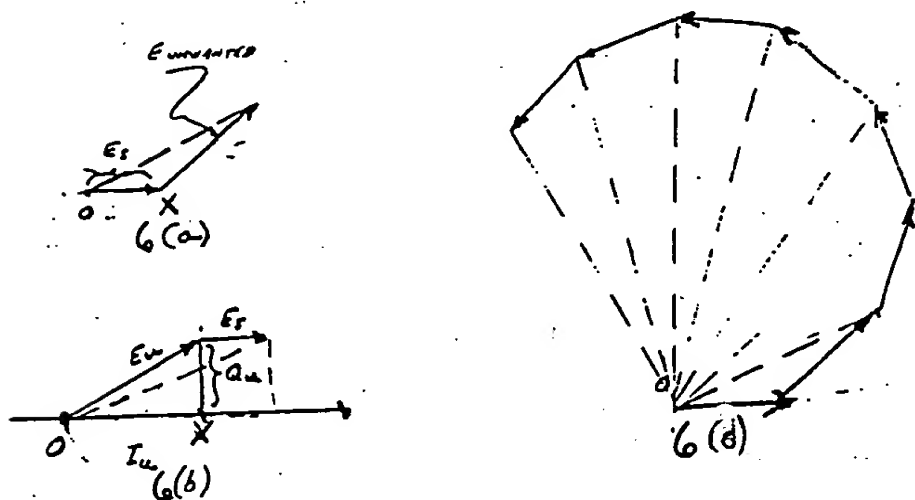
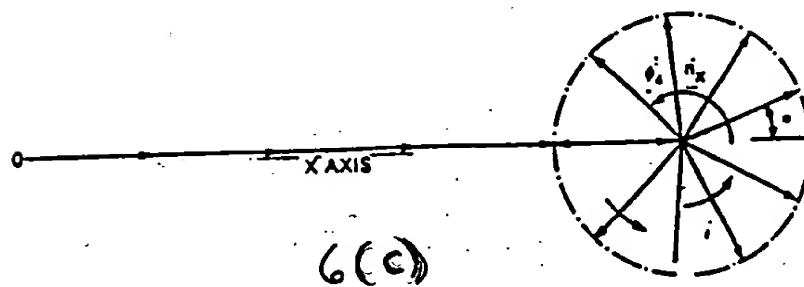


FIG 6 MANIFESTATIONS OF NOISE

00453526-120399

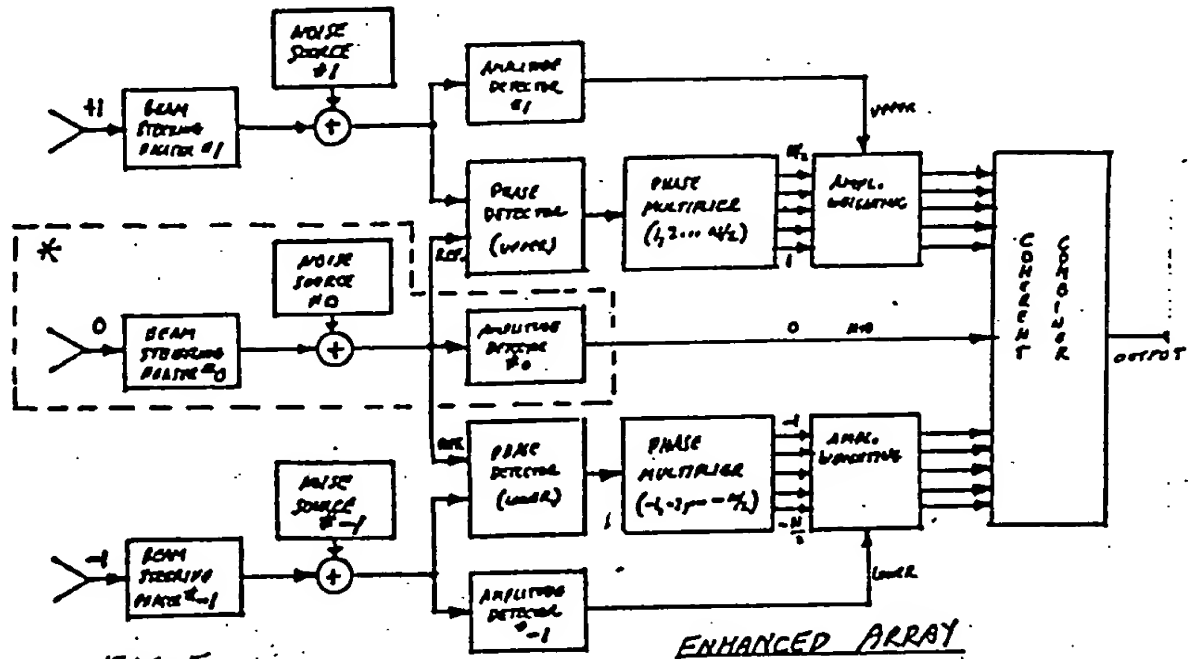


FIG 5

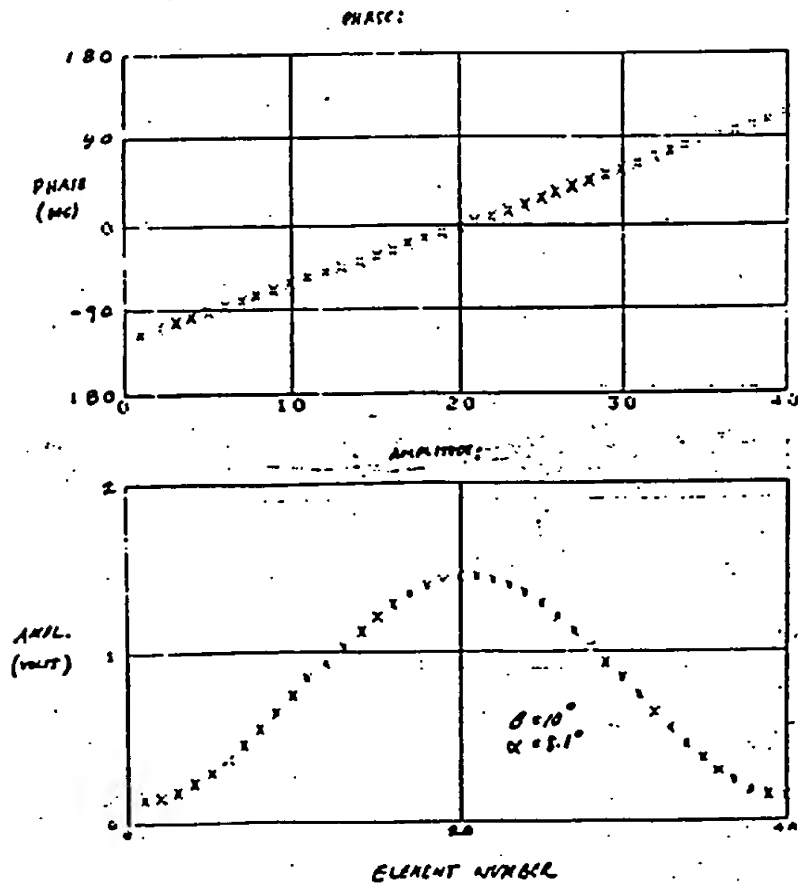


FIG 7 RESPONSE WITHOUT NOISE

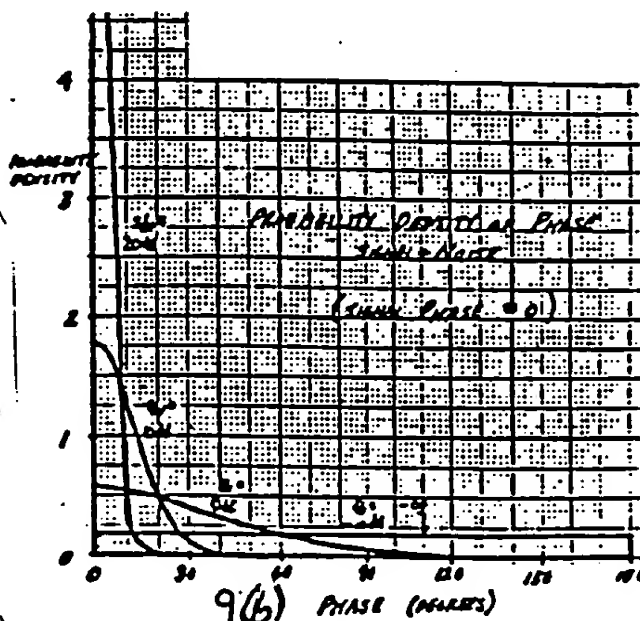
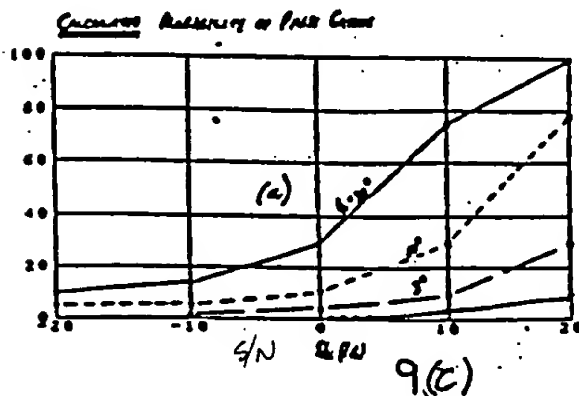
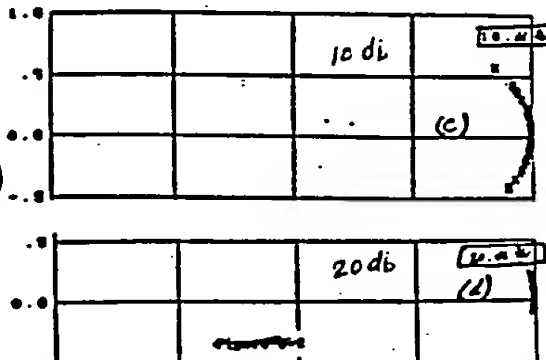
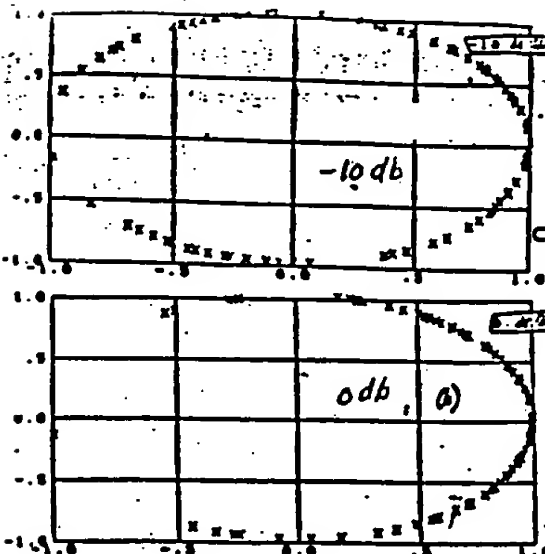
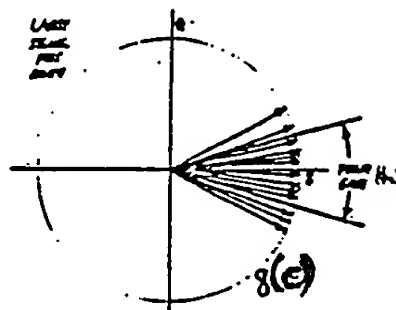
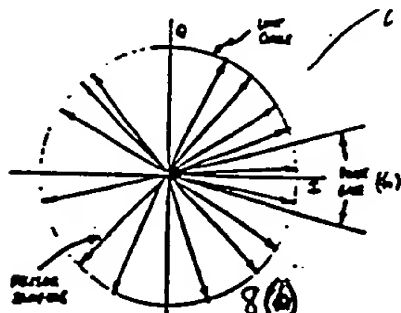
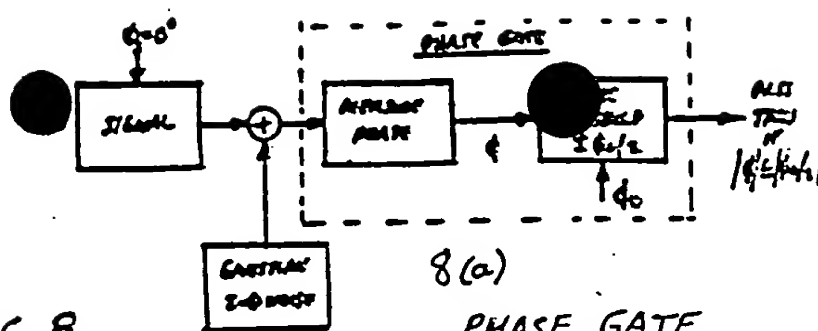


FIG 9 PERFORMANCE WITH NOISE

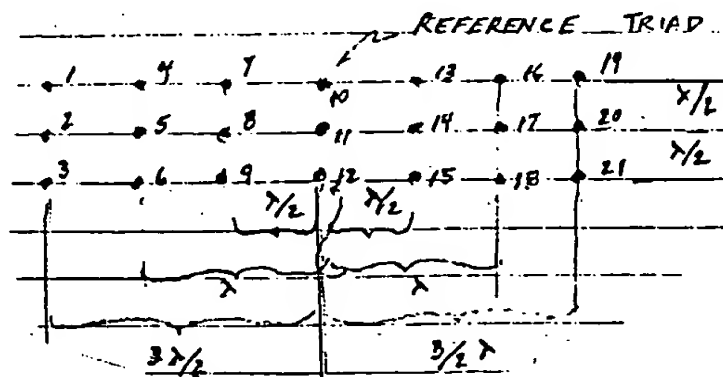


FIG 10(a)

7x3 ARRAY USED IN SIMULATION

61°

===== 0 dB ===== Trial 16 ===== I data =====									
Contents of original I array									
0.7349	1.3760	1.1123	1.4339	1.0919	0.7478	0.8836	0.3856	1.7902	LEFT
1.7061	2.3004	2.3358							CENTER
0.5273	1.9065	2.2319	0.4199	-0.5505	2.2936	2.1521	0.3127	1.2718	RIGHT
After signs of right I elements reversed:									
----- I values -----									
1 0.7349	4 1.4339	7 0.8836	10 1.7061	13 -0.5273	16 -0.4199	19 -2.152			
2 1.3760	5 1.0919	8 0.3856	11 2.3004	14 -1.9065	17 0.5505	20 -0.312			
3 1.1123	6 0.7478	9 1.7902	12 2.3358	15 -2.2319	18 -2.2936	21 -1.271			
Sum 3.2232	3.2737	3.0593	6.3422	-4.6657	-2.1629	-3.736			
Avg 1.0744	1.0912	1.0198	2.1141	-1.5552	-0.7210	-1.245			

FIG. 10(b)

00455460 120396

===== 0 dB ===== Trial 17 Group 2 ===== Q data =====
 Avg Q for sextet (w/ signs reversed) = 0.4769 ### Actual noise avg = -0.2302 ###

Sextet QA's
 Q QA
 4 0.0209 -0.4560
 5 0.3602 -0.1167 *
 6 0.7111 0.2342
 16 0.0031 -0.4738
 17 -0.2578 -0.7347
 18 2.0240 1.5471

FIG 11(a)

Left	Right	Pair	Avg(A)	B	TA	Q'A (C)	Delta(D)	Delta A(E)	Col 1	Col 2	Col 3
4	16		0.0089	0.0120	b	-0.4649	0.0031	-0.5867	-0.1217		
4	17		0.1394	-0.1185		-0.5954	-0.2578	-0.8476		-0.2522	
4	18		-1.0016	1.0225		0.5455	2.0240	1.4342			0.888Z
5	16		0.1786	0.1817	b	-0.2953	0.0031	-0.5867	-0.2914		
5	17		0.3090	0.0512		-0.4257	-0.2578	-0.8476		-0.4218	
5	18		-0.8319	1.1921		0.7152	2.0240	1.4342			0.7191
6	16		0.3540	0.3571	*	-0.1198	0.0031	-0.5867	-0.4668		
6	17		0.4844	0.2267		-0.2503	-0.2578	-0.8476		-0.5973	
6	18		-0.6565	1.3676	#	0.8906	2.0240	1.4342			0.5436
Sum =			-1.0157	4.2923		-0.0000	5.3079	0.0000	-0.8800	-1.2714	2.1514
Avg =			-0.1129	0.4769		-0.0000	0.5898	0.0000	-0.2933	-0.4238	0.7171

Dispersion = 2.393 : 1

Comparison value = -0.2933

Dispersion sum = -0.4131
 Dispersion dif = -0.1697
 Dispersion ratio = 0.1369 --> divided by 3 =

(Inherently indicated by bb or BB in non key entries)
 All same polarity, .. averageable; low dispersion ratio
 Case 1 average below threshold
 Case 2 average above threshold
 ? Average between .73 to .83
 Comparison value is average

(Expected A1)
 Process A1 POLARITY of noise is: -

===== 0 dB ===== Trial 2 Group 3 ===== Q data =====
 Avg Q for sextet (w/ signs reversed) = 0.1035 ### Actual noise avg = -0.2625 ###

Sextet QA's
 Q QA
 7 1.3410 1.2375
 8 1.0595 0.9560
 9 -0.6877 -0.7912
 13 -1.7936 -1.8971
 14 -0.5530 -0.6565 *
 15 1.2550 1.1515

FIG 11(b)

Left	Right	Pair	Avg(A)	B	Q'A (C)	Delta(D)	Delta A(E)	Col 1	Col 2	Col 3	
7	13		1.5673	-0.2263		-0.3298	-1.7936	-1.4297		-1.0999	
7	14		0.9470	0.3940	b	0.2905	-0.5530	-0.1891	-0.4796		
7	15		0.0430	1.2980		1.1945	1.2550	1.6189		0.4244	
8	13		1.4266	-0.3671		-0.4706	-1.7936	-1.4297		-0.9592	
8	14		0.8063	0.2533	*	0.1497	-0.5530	-0.1891	-0.3389		
8	15		-0.0977	1.1573		1.0537	1.2550	1.6189		0.5651	
9	13		0.5530	-1.2407	#	-1.3442	-1.7936	-1.4297		-0.0856	
9	14		-0.0673	-0.6204	B	-0.7239	-0.5530	-0.1891	0.5348		
9	15		-0.9713	0.2837		0.1801	1.2550	1.6189		1.4388	
Sum =			4.2066	0.9318		0.0000	-3.2748	0.0000	-0.2837	2.4283	-2.1446
Avg =			0.4674	0.1035		0.0000	-0.3639	0.0000		0.8094	-0.7149

Dispersion = -1.115 : 1

Comparison value = -0.2837

Dispersion sum = 0.0552
 Dispersion dif = 1.0144
 Dispersion ratio = 0.0544

(Inherently Bb combination)
 One odd polarity, .. use sum; dispersion ratio low
 Case 1 Σ less than threshold
 Case 2 presence of sizable B

(Expected B1)
 Process B1

POLARITY of noise is -
 sizable = > 67% of # in IA' column, where # is maximum value of polarity opposite to * polarity

09453526 - 120399

===== 0 dB ===== Trial 1 Group 3 ===== 0 data =====

Avg Q for sextet (w/ signs reversed) = 1.1320 ### Actual noise avg = 0.7660 ###

Sextet QA's
Q QA
7 1.6680 0.5360
8 0.2348 -0.8972
9 0.6360 -0.4960
13 2.2163 1.0843
14 0.8563 -0.2757
15 1.1806 0.0486 *

FIG 11 (c)

Left	Right	Pair	Avg(A)	B	Q'A (C)	Delta(D)	Delta A(E)	Col 1	Col 2	Col 3
7	13		-0.2742	1.9422	b	0.8101	2.2163	0.7986	-0.0116	
7	14		0.4059	1.2622		0.1301	0.8563	-0.5614	-0.6916	
7	15		0.2437	1.4243		0.2923	1.1806	-0.2371		-0.5294
8	13		-0.9908	1.2256	*	0.0935	2.2163	0.7986	0.7050	
8	14		-0.3108	0.5456	#	-0.5865	0.8563	-0.5614	0.0250	
8	15		-0.4729	0.7077		-0.4243	1.1806	-0.2371		0.1872
9	13		-0.7901	1.4262	b	0.2941	2.2163	0.7986	0.5044	
9	14		-0.1102	0.7462		-0.3859	0.8563	-0.5614	-0.1756	
9	15		-0.2723	0.9083		-0.2237	1.1806	-0.2371		-0.0134
Sum =			-2.5716	10.1880		-0.0000	12.7596	0.0000	1.1979	-0.8421
Avg =			-0.2857	1.1320		-0.0000	1.4177	0.0000		-0.3557

Dispersion = -43.547 : 1

Comparison value = 0.7050

Dispersion sum = 0.4928
Dispersion dif = 0.5160
Dispersion ratio = 0.9551

(Inherently bb or BB)

Use key or * entry; high dispersion ratio

Case 1 less than .73

Case 2 greater than .83

Comparison value is * index entry

(Expected C1)
Process C1

POLARITY of noise is: +

===== 0 dB ===== Trial 4 Group 1 ===== 0 data =====

Avg Q for sextet (w/ signs reversed) = 1.1629 ### Actual noise avg = 0.1628 ###

Sextet QA's
Q QA
1 2.6625 1.4997
2 1.9091 0.7462
3 1.0166 -0.1463 *
19 1.9264 0.7635
20 0.1684 -0.9945
21 -0.7059 -1.8688

FIG 11 (d)

Left	Right	Pair	Avg(A)	B	Q'A (C)	Delta(D)	Delta A(E)	Col 1	Col 2	Col 3
1	19		0.3681	2.2945	#	1.1316	1.9264	1.4634		0.3318
1	20		1.2471	1.4155	B	0.2526	0.1684	-0.2946	X -0.5472	
1	21		1.6842	0.9783		-0.1846	-0.7059	-1.1689	-0.9843	
2	19		-0.0086	1.9178		0.7549	1.9264	1.4634		0.7085
2	20		0.8704	1.0388	*	-0.1241	0.1684	-0.2946	-0.1705	
2	21		1.3075	0.6016		-0.5613	-0.7059	-1.1689	-0.6076	
3	19		-0.4549	1.4715		0.3086	1.9264	1.4634		1.1548
3	20		0.4241	0.5925	b	-0.5704	0.1684	-0.2946	0.2758	
3	21		0.8613	0.1554		-1.0075	-0.7059	-1.1689	-0.1614	
Sum =			6.2990	10.4657		-0.0000	4.1667	0.0000	-0.4418	-1.7533
Avg =			0.6999	1.1629		-0.0000	0.4630	0.0000		-0.5844

Dispersion = -1.984 : 1

Comparison value = 0.1053

Dispersion sum = -0.2714
Dispersion dif = -0.8230
Dispersion ratio = 0.3298

(Inherently bB) high dispersion ratio

Eliminate B when $\Sigma < \text{abs } 11.31$

Eliminate (b) when $\Sigma > 11.31$

Case 1 less than .73

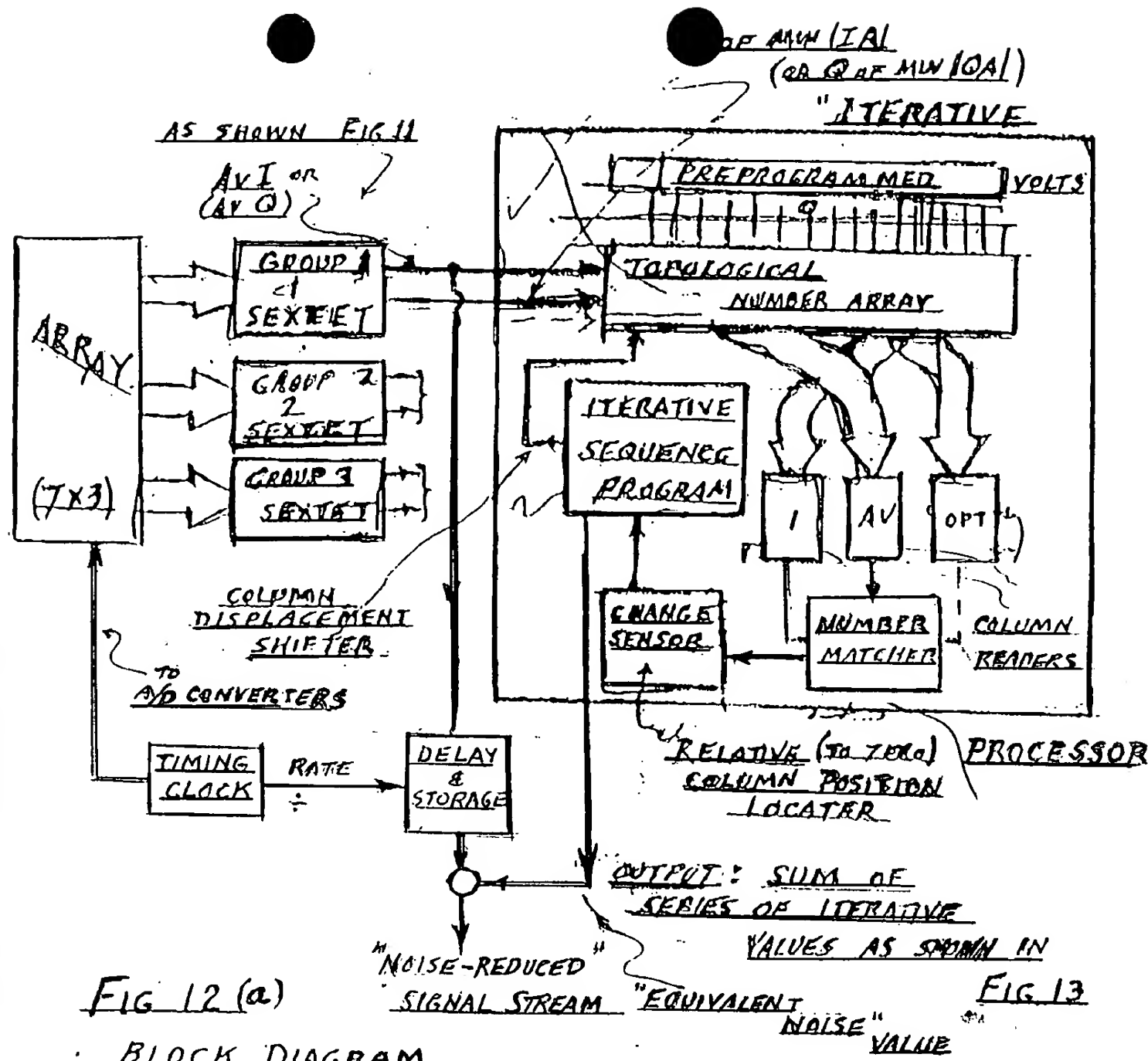
Case 2 greater than .83

(Expected D1)
Process D1

POLARITY of noise is: +

66027 9255460

06453526-120399



BLOCK DIAGRAM

ITERATIVE PROCESSING SCHEME

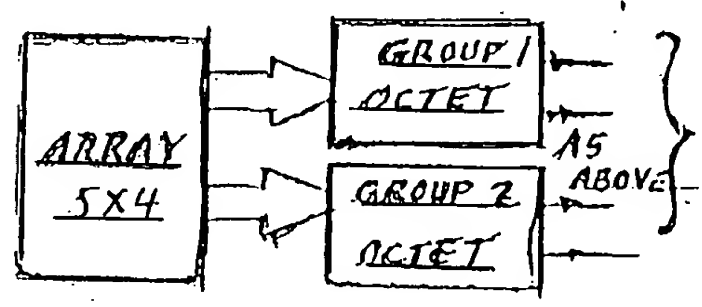


FIG 12 (b)

I data == Group 1 111 Noise averages 111 Ays scanned in opposite sense 111

Min Id	-9 v	-8.5 v	-8 v	-7.5 v	-7 v	-6.5 v	-6 v	-5.5 v	-5 v	-4.5 v	-4 v	-3.5 v	-3 v	-2.5 v	-2 v	-1.5 v	-1 v
Avg	1.204	1.154	1.104	1.054	1.004	0.954	0.904	0.854	0.804	0.754	0.704	0.654	0.604	0.554	0.504	0.454	0.404
208	0.041	-0.552	-0.502	-0.452	-0.402	-0.352	-0.302	-0.252	-0.202	-0.152	-0.102	-0.052	-0.002	0.048	0.098	0.148	0.198
Avg	-0.631	0.641	0.591	0.541	0.491	0.441	0.391	0.341	0.291	0.241	0.191	0.141	0.091	0.041	-0.009	-0.059	-0.109
218	-0.052	-1.161	-1.111	-1.061	-1.011	-0.961	-0.911	-0.861	-0.811	-0.761	-0.711	-0.661	-0.611	-0.561	-0.511	-0.461	-0.411
Avg	0.735	0.685	0.635	0.585	0.535	0.485	0.435	0.385	0.335	0.285	0.235	0.185	0.135	0.085	0.035	-0.015	-0.065
228	0.060	-1.005	-0.955	-0.905	-0.855	-0.805	-0.755	-0.705	-0.655	-0.605	-0.555	-0.505	-0.455	-0.405	-0.355	-0.305	-0.255
Avg	0.554	0.504	0.454	0.404	0.354	0.304	0.254	0.204	0.154	0.104	0.054	-0.004	-0.054	-0.104	-0.154	-0.204	-0.254
238	0.022	-1.124	-1.074	-1.024	-0.974	-0.924	-0.874	-0.824	-0.774	-0.724	-0.674	-0.624	-0.574	-0.524	-0.474	-0.424	-0.374
Avg	1.154	1.104	1.054	1.004	0.954	0.904	0.854	0.804	0.754	0.704	0.654	0.604	0.554	0.504	0.454	0.404	0.354
248	-0.002	-0.637	-0.587	-0.537	-0.487	-0.437	-0.387	-0.337	-0.287	-0.237	-0.187	-0.137	-0.087	-0.037	-0.013	-0.063	-0.113
Avg	1.100	1.050	1.000	0.950	0.900	0.850	0.800	0.750	0.700	0.650	0.600	0.550	0.500	0.450	0.400	0.350	0.300
258	-0.032	-0.732	-0.682	-0.632	-0.582	-0.532	-0.482	-0.432	-0.382	-0.332	-0.282	-0.232	-0.182	-0.132	-0.082	-0.032	-0.018
Avg	0.467	0.417	0.367	0.317	0.267	0.217	0.167	0.117	0.067	0.017	-0.033	-0.083	-0.133	-0.183	-0.233	-0.283	-0.333
268	-0.159	-1.481	-1.431	-1.381	-1.331	-1.281	-1.231	-1.181	-1.131	-1.081	-1.031	-0.981	-0.931	-0.881	-0.831	-0.781	-0.731
Avg	0.924	0.874	0.824	0.774	0.724	0.674	0.624	0.574	0.524	0.474	0.424	0.374	0.324	0.274	0.224	0.174	0.124
278	-0.120	-0.754	-0.704	-0.654	-0.604	-0.554	-0.504	-0.454	-0.404	-0.354	-0.304	-0.254	-0.204	-0.154	-0.104	-0.054	-0.004
Avg	0.782	0.732	0.682	0.632	0.582	0.532	0.482	0.432	0.382	0.332	0.282	0.232	0.182	0.132	0.082	0.032	-0.018
288	-0.178	-0.840	-0.790	-0.740	-0.690	-0.640	-0.590	-0.540	-0.490	-0.440	-0.390	-0.340	-0.290	-0.240	-0.190	-0.140	-0.090
Avg	1.244	1.194	1.144	1.094	1.044	0.994	0.944	0.894	0.844	0.794	0.744	0.694	0.644	0.594	0.544	0.494	0.444
298	-0.129	-0.683	-0.633	-0.583	-0.533	-0.483	-0.433	-0.383	-0.333	-0.283	-0.233	-0.183	-0.133	-0.083	-0.033	-0.017	-0.117
Avg	0.846	0.796	0.746	0.696	0.646	0.596	0.546	0.496	0.446	0.396	0.346	0.296	0.246	0.196	0.146	0.096	0.046
308	0.032	-0.921	-0.871	-0.821	-0.771	-0.721	-0.671	-0.621	-0.571	-0.521	-0.471	-0.421	-0.371	-0.321	-0.271	-0.221	-0.171
Avg	0.786	0.736	0.686	0.636	0.586	0.536	0.486	0.436	0.386	0.336	0.286	0.236	0.186	0.136	0.086	0.036	-0.018
318	-0.174	-1.187	-1.137	-1.087	-1.037	-0.987	-0.937	-0.887	-0.837	-0.787	-0.737	-0.687	-0.637	-0.587	-0.537	-0.487	-0.437
Avg	1.060	1.010	0.960	0.910	0.860	0.810	0.760	0.710	0.660	0.610	0.560	0.510	0.460	0.410	0.360	0.310	0.260
328	-0.015	-0.755	-0.705	-0.655	-0.605	-0.555	-0.505	-0.455	-0.405	-0.355	-0.305	-0.255	-0.205	-0.155	-0.105	-0.055	-0.005
Avg	0.993	0.943	0.893	0.843	0.793	0.743	0.693	0.643	0.593	0.543	0.493	0.443	0.393	0.343	0.293	0.243	0.193
338	-0.060	-0.697	-0.647	-0.597	-0.547	-0.497	-0.447	-0.397	-0.347	-0.297	-0.247	-0.197	-0.147	-0.097	-0.047	-0.017	-0.067
Avg	0.530	0.480	0.430	0.380	0.330	0.280	0.230	0.180	0.130	0.080	0.030	-0.020	-0.070	-0.120	-0.170	-0.220	-0.270
348	-0.202	-1.479	-1.429	-1.379	-1.329	-1.279	-1.229	-1.179	-1.129	-1.079	-1.029	-0.979	-0.929	-0.879	-0.829	-0.779	-0.729
Avg	1.035	0.985	0.935	0.885	0.835	0.785	0.735	0.685	0.635	0.585	0.535	0.485	0.435	0.385	0.335	0.285	0.235
358	-0.083	-0.848	-0.798	-0.748	-0.698	-0.648	-0.598	-0.548	-0.498	-0.448	-0.398	-0.348	-0.298	-0.248	-0.198	-0.148	-0.098
Avg	1.171	1.121	1.071	1.021	0.971	0.921	0.871	0.821	0.771	0.721	0.671	0.621	0.571	0.521	0.471	0.421	0.371
368	-0.212	-0.641	-0.591	-0.541	-0.491	-0.441	-0.391	-0.341	-0.291	-0.241	-0.191	-0.141	-0.091	-0.041	-0.011	-0.061	-0.111
Avg	1.024	0.974	0.924	0.874	0.824	0.774	0.724	0.674	0.624	0.574	0.524	0.474	0.424	0.374	0.324	0.274	0.224
378	0.015	-0.761	-0.711	-0.661	-0.611	-0.561	-0.511	-0.461	-0.411	-0.361	-0.311	-0.261	-0.211	-0.161	-0.111	-0.061	-0.011
Avg	0.614	0.564	0.514	0.464	0.414	0.364	0.314	0.264	0.214	0.164	0.114	0.064	0.014	-0.034	-0.084	-0.134	-0.184
388	0.003	-1.181	-1.131	-1.081	-1.031	-0.981	-0.931	-0.881	-0.831	-0.781	-0.731	-0.681	-0.631	-0.581	-0.531	-0.481	-0.431

FIG. 13(a)

09453526 120399

66E02T" 925E5460

Noise ave																
-0.05 v	0	.05 v	.1 v	.15 v	.2 v	.25 v	.3 v	.35 v	.40 v	.45 v	.5 v	.55 v	.6 v	.65 v	.7 v	.75 v
0.356	0.336	0.356	0.336	0.156	0.106	0.056	0.006	0.041	-0.094	-0.144	-0.194	-0.244	-0.294	-0.344	-0.394	-0.444
-0.298	0.348	0.338	0.448	0.498	0.548	0.598	0.648	0.698	0.748	0.798	0.848	0.898	0.948	0.998	1.048	1.098
-0.159	-0.209	-0.259	-0.309	0.359	-0.409	-0.459	-0.509	-0.559	-0.609	-0.659	-0.709	-0.759	-0.809	-0.859	-0.909	-0.959
-0.311	-0.261	-0.211	-0.161	0.111	-0.061	0.011	0.061	0.111	0.161	0.211	0.261	0.311	0.361	0.411	0.461	0.511
-0.115	-0.165	-0.215	-0.265	0.315	-0.365	-0.415	-0.465	-0.515	-0.565	-0.615	-0.665	-0.715	-0.765	-0.815	-0.865	-0.915
-0.155	-0.105	-0.055	0.005	0.045	0.095	0.145	0.195	0.245	0.295	0.345	0.395	0.445	0.495	0.545	0.595	0.645
-0.195	-0.245	-0.295	-0.345	0.395	-0.445	-0.495	-0.545	-0.595	-0.645	-0.695	-0.745	-0.795	-0.845	-0.895	-0.945	-0.995
-0.274	-0.224	-0.174	-0.124	0.074	-0.024	0.026	0.076	0.126	0.176	0.226	0.276	0.326	0.376	0.426	0.476	0.526
0.316	0.266	0.216	0.166	0.116	0.066	0.016	-0.034	-0.084	-0.134	-0.184	-0.234	-0.284	-0.334	-0.384	-0.434	-0.484
0.213	0.263	0.313	0.363	0.413	0.463	0.513	0.563	0.613	0.663	0.713	0.763	0.813	0.863	0.913	0.963	1.013
0.250	0.200	0.150	0.100	0.050	0.000	-0.050	-0.100	-0.150	-0.200	-0.250	-0.300	-0.350	-0.400	-0.450	-0.500	-0.550
0.118	0.168	0.218	0.268	0.318	0.368	0.418	0.468	0.518	0.568	0.618	0.668	0.718	0.768	0.818	0.868	0.918
-0.363	-0.413	-0.463	-0.513	-0.563	-0.613	-0.663	-0.713	-0.763	-0.813	-0.863	-0.913	-0.963	-1.013	-1.063	-1.113	-1.163
-0.631	-0.581	-0.531	-0.481	-0.431	-0.381	-0.331	-0.281	-0.231	-0.181	-0.131	-0.081	0.031	0.081	0.131	0.181	0.231
0.074	0.024	-0.026	-0.076	0.126	-0.176	-0.226	-0.276	-0.326	-0.376	-0.426	-0.476	-0.526	-0.576	-0.626	-0.676	-0.726
0.094	0.144	0.194	0.244	0.294	0.344	0.394	0.444	0.494	0.544	0.594	0.644	0.694	0.744	0.794	0.844	0.894
-0.066	-0.116	-0.166	-0.216	-0.266	-0.316	-0.366	-0.416	-0.466	-0.516	-0.566	-0.616	-0.666	-0.716	-0.766	-0.816	-0.866
0.010	0.060	0.110	0.160	0.210	0.260	0.310	0.360	0.410	0.460	0.510	0.560	0.610	0.660	0.710	0.760	0.810
0.396	0.346	0.296	0.246	0.196	0.146	0.096	0.046	0.004	0.054	-0.104	-0.154	-0.204	-0.254	-0.304	-0.354	-0.404
0.167	0.217	0.267	0.317	0.367	0.417	0.467	0.517	0.567	0.617	0.667	0.717	0.767	0.817	0.867	0.917	0.967
-0.000	-0.052	-0.102	-0.152	-0.202	-0.252	-0.302	-0.352	-0.402	-0.452	-0.502	-0.552	-0.602	-0.652	-0.702	-0.752	-0.802
-0.071	-0.021	0.029	0.079	0.129	0.179	0.229	0.279	0.329	0.379	0.429	0.479	0.529	0.579	0.629	0.679	0.729
-0.064	-0.114	-0.164	-0.214	-0.264	-0.314	-0.364	-0.414	-0.464	-0.514	-0.564	-0.614	-0.664	-0.714	-0.764	-0.814	-0.864
-0.337	-0.287	-0.237	-0.187	-0.137	-0.087	-0.037	0.013	0.063	0.113	0.163	0.213	0.263	0.313	0.363	0.413	0.463
0.210	0.160	0.110	0.060	0.010	-0.040	-0.090	-0.140	-0.190	-0.240	-0.290	-0.340	-0.390	-0.440	-0.490	-0.540	-0.590
0.095	0.145	0.195	0.245	0.295	0.345	0.395	0.445	0.495	0.545	0.595	0.645	0.695	0.745	0.795	0.845	0.895
0.143	0.093	0.043	-0.007	-0.057	-0.107	-0.157	-0.207	-0.257	-0.307	-0.357	-0.407	-0.457	-0.507	-0.557	-0.607	-0.657
-0.037	0.013	0.063	0.113	0.163	0.213	0.263	0.313	0.363	0.413	0.463	0.513	0.563	0.613	0.663	0.713	0.763
-0.320	-0.370	-0.420	-0.470	-0.520	-0.570	-0.620	-0.670	-0.720	-0.770	-0.820	-0.870	-0.920	-0.970	-1.020	-1.070	-1.120
-0.629	-0.579	-0.529	-0.479	-0.429	-0.379	-0.329	-0.279	-0.229	-0.179	-0.129	-0.079	0.029	0.079	0.129	0.179	0.229
0.185	0.135	0.085	0.035	-0.015	-0.065	-0.115	-0.165	-0.215	-0.265	-0.315	-0.365	-0.415	-0.465	-0.515	-0.565	-0.615
0.007	0.052	0.102	0.152	0.202	0.252	0.302	0.352	0.402	0.452	0.502	0.552	0.602	0.652	0.702	0.752	0.802
0.321	0.271	0.221	0.171	0.121	0.071	-0.021	-0.071	-0.121	-0.171	-0.221	-0.271	-0.321	-0.371	-0.421	-0.471	-0.521
0.009	0.059	0.109	0.159	0.209	0.259	0.309	0.359	0.409	0.459	0.509	0.559	0.609	0.659	0.709	0.759	0.809
0.174	0.124	0.074	-0.024	-0.074	-0.124	-0.174	-0.224	-0.274	-0.324	-0.374	-0.424	-0.474	-0.524	-0.574	-0.624	-0.674
0.089	0.139	0.189	0.239	0.289	0.339	0.389	0.439	0.489	0.539	0.589	0.639	0.689	0.739	0.789	0.839	0.889
-0.234	-0.284	-0.334	-0.384	-0.434	-0.484	-0.534	-0.584	-0.634	-0.684	-0.734	-0.784	-0.834	-0.884	-0.934	-0.984	-1.034
-0.331	-0.281	-0.231	-0.181	-0.131	-0.081	-0.031	0.019	0.069	0.119	0.169	0.219	0.269	0.319	0.369	0.419	0.469

FIG.3(6)

09453526 : 120399

I data ---- 0 dB ---- Group 1		Average I values																*** Avg scanned in opposite sense **	
	Min IA	-9 v	-8.5 v	-8 v	-7.5 v	-7 v	-6.5 v	-6 v	-5.5 v	-5 v	-4.5 v	-4 v	-3.5 v	-3 v	-2.5 v	-2 v	-1.5 v	-1 v	
Avg 20B		2.421	2.381	2.331	2.281	2.231	2.181	2.131	2.081	2.031	1.981	1.931	1.881	1.831	1.781	1.731	1.681	1.631	
	0.041	0.672	0.722	0.772	0.822	0.872	0.922	0.972	1.022	1.072	1.122	1.172	1.222	1.272	1.322	1.372	1.422	1.472	
Avg 21A		1.916	1.866	1.816	1.766	1.716	1.666	1.616	1.566	1.516	1.466	1.416	1.366	1.316	1.266	1.216	1.166	1.116	
	-0.052	0.064	0.114	0.164	0.214	0.264	0.314	0.364	0.414	0.464	0.514	0.564	0.614	0.664	0.714	0.764	0.814	0.864	
Avg 22A		1.960	1.910	1.860	1.810	1.760	1.710	1.660	1.610	1.560	1.510	1.460	1.410	1.360	1.310	1.260	1.210	1.160	
	0.060	0.220	0.270	0.320	0.370	0.420	0.470	0.520	0.570	0.620	0.670	0.720	0.770	0.820	0.870	0.920	0.970	1.020	
Avg 23A		1.878	1.828	1.778	1.728	1.678	1.628	1.578	1.528	1.478	1.428	1.378	1.328	1.278	1.228	1.178	1.128	1.078	
	0.022	0.101	0.151	0.201	0.251	0.301	0.351	0.401	0.451	0.501	0.551	0.601	0.651	0.701	0.751	0.801	0.851	0.901	
Avg 24A		2.390	2.340	2.290	2.240	2.190	2.140	2.090	2.040	1.990	1.940	1.890	1.840	1.790	1.740	1.690	1.640	1.590	
	-0.002	0.598	0.638	0.688	0.738	0.788	0.838	0.888	0.938	0.988	1.038	1.088	1.138	1.188	1.238	1.288	1.338	1.388	
Avg 25B		2.325	2.275	2.225	2.175	2.125	2.075	2.025	1.975	1.925	1.875	1.825	1.775	1.725	1.675	1.625	1.575	1.525	
	-0.032	0.493	0.543	0.593	0.643	0.693	0.743	0.793	0.843	0.893	0.943	0.993	1.043	1.093	1.143	1.193	1.243	1.293	
Avg 26B		1.712	1.662	1.612	1.562	1.512	1.462	1.412	1.362	1.312	1.262	1.212	1.162	1.112	1.062	1.012	0.962	0.912	
	-0.169	0.257	0.207	0.157	0.107	0.057	0.007	0.043	0.093	0.143	0.193	0.243	0.293	0.343	0.393	0.443	0.493	0.543	
Avg 27A		2.149	2.099	2.049	1.999	1.949	1.899	1.849	1.799	1.749	1.699	1.649	1.599	1.549	1.499	1.449	1.399	1.349	
	0.120	0.469	0.519	0.569	0.619	0.669	0.719	0.769	0.819	0.869	0.919	0.969	1.019	1.069	1.119	1.169	1.219	1.269	
Avg 28C		2.007	1.957	1.907	1.857	1.807	1.757	1.707	1.657	1.607	1.557	1.507	1.457	1.407	1.357	1.307	1.257	1.207	
	0.179	0.395	0.445	0.495	0.545	0.595	0.645	0.695	0.745	0.795	0.845	0.895	0.945	0.995	1.045	1.095	1.145	1.195	
Avg 29C		2.471	2.421	2.371	2.321	2.271	2.221	2.171	2.121	2.071	2.021	1.971	1.921	1.871	1.821	1.771	1.721	1.671	
	-0.129	0.542	0.592	0.642	0.692	0.742	0.792	0.842	0.892	0.942	0.992	1.042	1.092	1.142	1.192	1.242	1.292	1.342	
Avg 30B		2.073	2.023	1.973	1.923	1.873	1.823	1.773	1.723	1.673	1.623	1.573	1.523	1.473	1.423	1.373	1.323	1.273	
	0.032	0.304	0.354	0.404	0.454	0.504	0.554	0.604	0.654	0.704	0.754	0.804	0.854	0.904	0.954	1.004	1.054	1.104	
Avg 31C		2.011	1.961	1.911	1.861	1.811	1.761	1.711	1.661	1.611	1.561	1.511	1.461	1.411	1.361	1.311	1.261	1.211	
	-0.174	0.037	0.087	0.137	0.187	0.237	0.287	0.337	0.387	0.437	0.487	0.537	0.587	0.637	0.687	0.737	0.787	0.837	
Avg 32C		2.285	2.235	2.185	2.135	2.085	2.035	1.985	1.935	1.885	1.835	1.785	1.735	1.685	1.635	1.585	1.535	1.485	
	-0.015	0.470	0.520	0.570	0.620	0.670	0.720	0.770	0.820	0.870	0.920	0.970	1.020	1.070	1.120	1.170	1.220	1.270	
Avg 33C		2.218	2.168	2.118	2.068	2.018	1.968	1.918	1.868	1.818	1.768	1.718	1.668	1.618	1.568	1.518	1.468	1.418	
	-0.080	0.339	0.389	0.439	0.489	0.539	0.589	0.639	0.689	0.739	0.789	0.839	0.889	0.939	0.989	1.039	1.089	1.139	
Avg 34A		1.755	1.705	1.655	1.605	1.555	1.505	1.455	1.405	1.355	1.305	1.255	1.205	1.155	1.105	1.055	1.005	0.955	
	-0.209	-0.255	-0.205	-0.155	-0.105	-0.055	-0.005	0.045	0.095	0.145	0.195	0.245	0.295	0.345	0.395	0.445	0.495	0.545	
Avg 35C		2.260	2.210	2.160	2.110	2.060	2.010	1.960	1.910	1.860	1.810	1.760	1.710	1.660	1.610	1.560	1.510	1.460	
	-0.093	0.377	0.427	0.477	0.527	0.577	0.627	0.677	0.727	0.777	0.827	0.877	0.927	0.977	1.027	1.077	1.127	1.177	
Avg 36B		2.396	2.346	2.296	2.246	2.196	2.146	2.096	2.046	1.996	1.946	1.896	1.846	1.796	1.746	1.696	1.646	1.596	
	-0.212	0.384	0.434	0.484	0.534	0.584	0.634	0.684	0.734	0.784	0.834	0.884	0.934	0.984	1.034	1.084	1.134	1.184	
Avg 37C		2.249	2.199	2.149	2.099	2.049	1.999	1.949	1.899	1.849	1.799	1.749	1.699	1.649	1.599	1.549	1.499	1.449	
	0.015	0.463	0.513	0.563	0.613	0.663	0.713	0.763	0.813	0.863	0.913	0.963	1.013	1.063	1.113	1.163	1.213	1.263	
Avg 38B		1.841	1.791	1.741	1.691	1.641	1.591	1.541	1.491	1.441	1.391	1.341	1.291	1.241	1.191	1.141	1.091	1.041	
	0.003	0.044	0.094	0.144	0.194	0.244	0.294	0.344	0.394	0.444	0.494	0.544	0.594	0.644	0.694	0.744	0.794	0.844	

FIG. 13(c)

064535306-120399

I data === 0 dB === Group 1 Average I values ↓																
.05 v	0 v	.05 v	.1 v	.15 v	.2 v	.25 v	.3 v	.35 v	.4 v	.45 v	.5 v	.55 v	.6 v	.65 v	.7 v	.75 v
1.581	1.531	1.481	1.431	1.381	1.331	1.281	1.231	1.181	1.131	1.081	1.031	0.981	0.931	0.881	0.831	0.781
1.522	1.572	1.622	1.672	1.722	1.772	1.822	1.872	1.922	1.972	2.022	2.072	2.122	2.172	2.222	2.272	2.322
1.066	1.016	0.966	0.916	0.866	0.816	0.766	0.716	0.666	0.616	0.566	0.516	0.466	0.416	0.366	0.316	0.266
0.914	0.964	1.014	1.064	1.114	1.164	1.214	1.264	1.314	1.364	1.414	1.464	1.514	1.564	1.614	1.664	1.714
1.110	1.060	1.010	0.960	0.910	0.860	0.810	0.760	0.710	0.660	0.610	0.560	0.510	0.460	0.410	0.360	0.310
1.070	1.120	1.170	1.220	1.270	1.320	1.370	1.420	1.470	1.520	1.570	1.620	1.670	1.720	1.770	1.820	1.870
1.028	0.978	0.928	0.878	0.828	0.778	0.728	0.678	0.628	0.578	0.528	0.478	0.428	0.378	0.328	0.278	0.228
0.951	1.001	1.051	1.101	1.151	1.201	1.251	1.301	1.351	1.401	1.451	1.501	1.551	1.601	1.651	1.701	1.751
1.540	1.490	1.440	1.390	1.340	1.290	1.240	1.190	1.140	1.090	1.040	0.990	0.940	0.890	0.840	0.790	0.740
1.438	1.488	1.538	1.588	1.638	1.688	1.738	1.788	1.838	1.888	1.938	1.988	2.038	2.088	2.138	2.188	2.238
1.475	1.425	1.375	1.325	1.275	1.225	1.175	1.125	1.075	1.025	0.975	0.925	0.875	0.825	0.775	0.725	0.675
1.343	1.393	1.443	1.493	1.543	1.593	1.643	1.693	1.743	1.793	1.843	1.893	1.943	1.993	2.043	2.093	2.143
0.862	0.812	0.762	0.712	0.662	0.612	0.562	0.512	0.462	0.412	0.362	0.312	0.262	0.212	0.162	0.112	0.062
0.593	0.643	0.693	0.743	0.793	0.843	0.893	0.943	0.993	1.043	1.093	1.143	1.193	1.243	1.293	1.343	1.393
1.299	1.249	1.199	1.149	1.099	1.049	0.999	0.949	0.899	0.849	0.799	0.749	0.699	0.649	0.599	0.549	0.499
1.318	1.368	1.418	1.468	1.518	1.568	1.618	1.668	1.718	1.768	1.818	1.868	1.918	1.968	2.018	2.068	2.118
1.157	1.107	1.057	1.007	0.957	0.907	0.857	0.807	0.757	0.707	0.657	0.607	0.557	0.507	0.457	0.407	0.357
1.235	1.285	1.335	1.385	1.435	1.485	1.535	1.585	1.635	1.685	1.735	1.785	1.835	1.885	1.935	1.985	2.035
1.621	1.571	1.521	1.471	1.421	1.371	1.321	1.271	1.221	1.171	1.121	1.071	1.021	0.971	0.921	0.871	0.821
1.392	1.442	1.492	1.542	1.592	1.642	1.692	1.742	1.792	1.842	1.892	1.942	1.992	2.042	2.092	2.142	2.192
1.223	1.173	1.123	1.073	1.023	0.973	0.923	0.873	0.823	0.773	0.723	0.673	0.623	0.573	0.523	0.473	0.423
1.154	1.204	1.254	1.304	1.354	1.404	1.454	1.504	1.554	1.604	1.654	1.704	1.754	1.804	1.854	1.904	1.954
1.161	1.111	1.061	1.011	0.961	0.911	0.861	0.811	0.761	0.711	0.661	0.611	0.561	0.511	0.461	0.411	0.361
0.807	0.857	0.907	0.957	1.007	1.057	1.107	1.157	1.207	1.257	1.307	1.357	1.407	1.457	1.507	1.557	1.607
1.435	1.385	1.335	1.285	1.235	1.185	1.135	1.085	1.035	0.985	0.935	0.885	0.835	0.785	0.735	0.685	0.635
1.320	1.370	1.420	1.470	1.520	1.570	1.620	1.670	1.720	1.770	1.820	1.870	1.920	1.970	2.020	2.070	2.120
1.368	1.318	1.268	1.218	1.168	1.118	1.068	1.018	0.968	0.918	0.868	0.818	0.768	0.718	0.668	0.618	0.568
1.188	1.238	1.288	1.338	1.388	1.438	1.488	1.538	1.588	1.638	1.688	1.738	1.788	1.838	1.888	1.938	1.988
0.905	0.855	0.805	0.755	0.705	0.655	0.605	0.555	0.505	0.455	0.405	0.355	0.305	0.255	0.205	0.155	0.105
0.595	0.645	0.695	0.745	0.795	0.845	0.895	0.945	0.995	1.045	1.095	1.145	1.195	1.245	1.295	1.345	1.395
1.410	1.360	1.310	1.260	1.210	1.160	1.110	1.060	1.010	0.960	0.910	0.860	0.810	0.760	0.710	0.660	0.610
1.227	1.277	1.327	1.377	1.427	1.477	1.527	1.577	1.627	1.677	1.727	1.777	1.827	1.877	1.927	1.977	2.027
1.546	1.496	1.446	1.396	1.346	1.296	1.246	1.196	1.146	1.096	1.046	0.996	0.946	0.896	0.846	0.796	0.746
1.234	1.284	1.334	1.384	1.434	1.484	1.534	1.584	1.634	1.684	1.734	1.784	1.834	1.884	1.934	1.984	2.034
1.399	1.349	1.299	1.249	1.199	1.149	1.099	1.049	0.999	0.949	0.899	0.849	0.799	0.749	0.699	0.649	0.599
1.313	1.363	1.413	1.463	1.513	1.563	1.613	1.663	1.713	1.763	1.813	1.863	1.913	1.963	2.013	2.063	2.113
0.991	0.941	0.891	0.841	0.791	0.741	0.691	0.641	0.591	0.541	0.491	0.441	0.391	0.341	0.291	0.241	0.191
0.894	0.944	0.994	1.044	1.094	1.144	1.194	1.244	1.294	1.344	1.394	1.444	1.494	1.544	1.594	1.644	1.694

FIG. B(d)

RANDUOM I data

Trial/Group	Orig Noise Avg	1	2	3	4	5	Equip Voltage Added	Last Noise Avg	Ratio Orig : Last
205 1	0.1481	0.0636	-0.1314	0.0636	-0.0554	0.0061	-0.1733	-0.0252	5.9
205 2	0.5426	0.3662	0.1162	-0.1336	-0.0066	0.0533	-0.5201	0.0223	14.1
205 3	0.6213	0.5002	0.2502	0.0002	-0.1246	-0.0623	-0.6524	-0.0311	20.0
206 1	-0.2508	-0.0508	0.1992	-0.0508	0.0742	0.0117	0.2313	-0.0176	12.5
206 2	0.1813	-0.1142	0.1358	-0.1142	0.0108	-0.0517	-0.2017	-0.0205	3.9
206 3	-0.4060	-0.3165	-0.0895	0.1635	0.0585	-0.0040	0.4332	0.0272	14.9
207 1	-0.2893	-0.0300	0.2200	-0.0300	0.0950	0.0325	0.2906	0.0013	223.5
207 2	-0.0591	0.1266	-0.1232	0.1266	0.0016	-0.0607	0.0296	-0.0295	2.0
207 3	0.8016	0.7904	0.5404	0.2904	0.1654	0.1029	-0.7300	0.0716	11.2
208 1	-0.3269	-0.1255	0.1245	-0.1255	-0.0005	0.0620	0.3577	0.0308	10.6
208 2	-0.5892	-0.4528	-0.2628	0.0472	-0.0778	-0.0153	0.6052	0.0160	36.9
208 3	-0.5162	-0.3509	-0.1009	0.1491	0.0241	-0.0384	0.5090	-0.0071	72.4
209 1	-0.3328	-0.2315	0.0185	-0.2315	-0.1065	-0.0440	0.3200	-0.0128	26.1
209 2	0.7883	0.6286	0.3786	0.1286	0.0036	-0.0589	-0.6160	-0.0277	28.5
209 3	-0.3146	-0.1996	0.0504	-0.1996	-0.0746	-0.0121	0.3338	0.0192	16.4
210 1	-0.4353	-0.2432	0.0068	-0.2432	-0.1182	-0.0557	0.4109	-0.0244	17.6
210 2	-0.1066	0.1332	-0.1166	0.1332	0.0082	-0.0543	0.0836	-0.0230	4.6
210 3	0.2597	0.0237	-0.2243	0.0237	-0.0793	-0.0366	-0.2652	-0.0055	46.7
211 1	-0.2477	-0.0220	0.2280	-0.0220	0.1030	0.0405	0.2569	0.0093	26.7
211 2	-0.2277	-0.2138	0.0361	-0.2138	-0.0668	-0.0263	0.2327	0.0045	46.0
211 3	0.6775	0.3946	0.3446	0.0946	-0.0304	0.0321	-0.6767	0.0008	820.7
212 1	0.1145	-0.2333	0.0177	-0.2333	-0.1075	-0.0446	-0.1280	-0.0136	8.4
212 2	0.3209	0.2503	0.0003	-0.2497	-0.1247	-0.0622	-0.3518	-0.0309	10.4
212 3	0.2595	0.2159	-0.0341	0.2159	0.0909	0.0284	-0.2624	-0.0019	90.1
213 1	0.4217	0.3221	-0.0279	0.2221	0.0971	0.0346	-0.4183	0.0034	125.3
213 2	-0.5357	-0.3012	-0.0312	0.1986	0.0738	0.0116	0.5137	-0.0179	26.7
213 3	-0.2943	-0.2748	-0.0248	0.2232	0.1002	0.0377	0.3008	0.0065	43.3
214 1	-0.6983	-0.5029	-0.2529	-0.0029	0.1221	0.0576	0.7267	0.0403	24.6
214 2	0.7664	0.7016	0.4516	0.2016	0.0766	0.0141	-0.7836	-0.0171	44.7
214 3	0.3609	0.2281	-0.0219	0.2281	0.1031	0.0406	-0.3516	0.0093	38.7
215 1	-0.5990	-0.3920	-0.1420	0.1080	-0.0170	0.0455	0.6132	0.0142	42.1
215 2	-0.6416	-0.6169	-0.3669	-0.1169	0.0081	-0.0544	0.6187	-0.0231	27.8
215 3	-0.2020	-0.0166	0.2334	-0.0166	0.1084	0.0459	0.2166	0.0146	13.8
216 1	0.2267	-0.0009	0.2491	-0.0009	0.1241	0.0616	-0.1964	0.0303	7.5
216 2	-0.7869	-0.7607	-0.5107	-0.2607	-0.1357	-0.0732	0.7450	-0.0419	18.6
216 3	-0.3518	-0.0974	0.1506	-0.0994	0.0256	-0.0369	0.3462	-0.0057	61.7
217 1	-0.3168	-0.0968	0.1532	-0.0968	0.0262	-0.0343	0.3138	-0.0031	103.9
217 2	0.3848	0.3126	0.0626	-0.1874	-0.0624	0.0001	-0.4160	-0.0312	12.3
217 3	0.3492	0.2517	0.0017	-0.2483	-0.1233	-0.0608	-0.3788	-0.0296	11.8
218 1	0.2194	0.0254	-0.2246	0.0254	-0.0996	-0.0371	-0.2253	-0.0059	37.2
218 2	-0.6434	-0.5998	-0.3498	-0.0998	0.0252	-0.0373	0.6373	-0.0061	106.0
218 3	0.2516	0.1355	-0.1145	0.1355	0.0105	-0.0520	-0.2724	-0.0207	12.1
219 1	-0.6197	-0.5113	-0.2613	-0.0113	0.1137	0.0512	0.6596	0.0200	41.1
219 2	-0.1855	0.0141	-0.2359	0.0141	-0.1109	-0.0464	0.1666	-0.0172	10.6
219 3	-0.2779	-0.1231	0.1269	-0.1231	0.0019	-0.0606	0.2486	-0.0294	9.5
220 1	-0.2276	-0.0756	0.1744	-0.0756	0.0474	-0.0131	0.1477	0.0181	12.7
220 2	-0.2719	-0.1709	0.0791	-0.1709	-0.0439	0.0166	0.2582	-0.0146	13.6
220 3	-0.0834	-0.0404	0.2076	-0.0404	0.0646	0.0121	0.0763	-0.0091	9.4
221 1	-0.3921	-0.2116	0.0381	-0.2116	-0.0863	-0.0273	0.3790	0.0069	56.3
221 2	0.8987	0.7252	0.5552	0.2652	0.1602	0.0977	-0.6323	0.0664	13.0
221 3	-0.3528	-0.3370	-0.0670	0.1630	0.0360	-0.0247	0.3576	0.0066	52.0

FIG. 14(a)

06E021" 925E5460

RANDOM data

Trial/ Group	Orig Noise Avg	New Noise Average					Equip Voltage Added	Last Noise Avg	Ratio Orig : Last
		1	2	3	4	5			
205 1	0.4440	0.3970	0.1470	-0.1030	0.0220	-0.0405	-0.4522	-0.0092	48.1
205 2	0.1928	0.0077	-0.2423	0.0077	-0.1173	-0.0548	-0.2163	-0.0235	8.2
205 3	0.2307	0.0307	-0.2193	0.0307	-0.0943	-0.0318	-0.2313	-0.0006	392.9
206 1	0.6667	0.5649	0.3149	0.0649	-0.0601	0.0024	-0.6955	-0.0288	23.1
206 2	-0.0959	0.1153	-0.1347	0.1153	-0.0097	0.0528	0.1174	0.0215	4.5
206 3	0.0218	-0.2565	-0.0065	0.2435	0.1185	0.0560	0.0030	0.0248	0.9
207 1	0.7412	0.7194	0.4694	0.2194	0.0944	0.0319	-0.7406	0.0004	1181.1
207 2	-0.2973	-0.2522	-0.0022	0.2478	0.1228	0.0603	0.3263	0.0290	10.2
207 3	0.3831	-0.0517	0.1983	-0.0517	0.0733	0.0108	-0.4034	-0.0205	18.7
208 1	0.2199	0.1728	-0.0772	0.1728	0.0478	-0.0147	-0.2033	0.0166	13.3
208 2	0.4198	0.3966	0.1466	-0.1034	0.0216	-0.0409	-0.4295	-0.0097	43.4
208 3	-0.1523	-0.0900	0.1600	-0.0900	0.0350	-0.0275	0.1561	0.0038	40.1
209 1	-0.3033	-0.2685	-0.0185	0.2315	0.1065	0.0440	0.3161	0.0127	23.8
209 2	-0.0808	0.0528	-0.1972	0.0528	-0.0722	-0.0097	0.1024	0.0216	3.7
209 3	-0.0148	0.1385	-0.1115	0.1385	0.0135	-0.0480	-0.0029	-0.0177	0.8
210 1	0.2507	0.1607	-0.0893	0.1607	0.0357	-0.0268	-0.2462	0.0044	56.8
210 2	0.2427	0.2049	-0.0451	0.2049	0.0799	0.0174	-0.2566	-0.0139	17.5
210 3	0.0961	-0.0761	0.1739	-0.0761	0.0489	-0.0136	-0.0784	0.0177	5.4
211 1	0.2369	0.2232	-0.0268	0.2232	0.0982	0.0357	-0.2325	0.0044	53.5
211 2	0.4865	0.2534	0.0034	-0.2466	-0.1216	-0.0591	-0.5143	-0.0278	17.5
211 3	-0.7412	-0.7039	-0.4539	-0.2039	-0.0739	-0.0164	0.7560	0.0148	50.1
212 1	0.5285	0.3926	0.1426	-0.1074	0.0176	-0.0449	-0.5421	-0.0136	38.8
212 2	0.1817	0.0836	-0.1670	0.0836	-0.0420	0.0205	-0.1935	-0.0107	16.9
212 3	-0.0208	0.1420	-0.1080	0.1420	0.0170	-0.0455	0.0066	-0.0142	1.5
213 1	-0.2570	-0.1652	0.0948	-0.1652	-0.0402	0.0223	0.2480	-0.0090	28.7
213 2	-0.0064	0.0310	-0.2190	0.0310	-0.0940	-0.0315	0.0062	-0.0003	24.3
213 3	-0.5096	-0.3200	-0.0700	0.1900	0.0550	-0.0075	0.5333	0.0237	21.5
214 1	-0.0246	0.1703	-0.0797	0.1703	0.0453	-0.0172	0.0287	0.0141	1.8
214 2	-0.1595	-0.0912	0.1505	-0.0912	0.0338	-0.0267	0.1620	0.0025	62.8
214 3	0.1216	-0.0494	0.2006	-0.0494	0.0756	0.0131	-0.1398	-0.0181	6.7
215 1	-0.3403	-0.0213	0.2287	-0.0213	0.1037	0.0412	0.3502	0.0099	34.3
215 2	-0.1557	-0.0243	0.2257	-0.0243	0.1007	0.0382	0.1627	0.0069	22.4
215 3	-0.5943	-0.3037	-0.0537	0.1963	0.0713	0.0088	0.5718	-0.0225	26.5
216 1	0.1584	0.0282	-0.2218	0.0282	-0.0968	-0.0343	-0.1614	-0.0030	52.0
216 2	0.3981	0.3794	0.1294	-0.1206	0.0044	-0.0581	-0.4250	-0.0268	14.8
216 3	0.1159	-0.0841	0.1659	-0.0841	0.0409	-0.0216	-0.1063	0.0097	12.0
217 1	0.4497	0.2497	-0.0003	0.2497	0.1247	0.0522	-0.4188	0.0309	14.5
217 2	0.5273	0.2169	-0.0331	0.2169	0.0919	0.0294	-0.5292	-0.0019	278.7
217 3	0.1066	-0.0700	0.1800	-0.0700	0.0550	-0.0075	-0.0829	0.0238	4.5
218 1	-0.4485	-0.2822	-0.0322	0.2178	0.0928	0.0303	0.4475	-0.0010	453.7
218 2	0.0983	-0.1447	0.1053	-0.1447	-0.0197	0.0428	-0.0867	0.0115	8.5
218 3	0.0171	-0.1190	0.1310	-0.1190	0.0060	-0.0565	-0.0423	-0.0252	0.7
219 1	0.0508	-0.1111	0.1389	-0.1111	0.0139	-0.0486	-0.0681	-0.0173	2.9
219 2	0.2668	0.0668	-0.1832	0.0668	-0.0582	0.0043	-0.2938	-0.0270	9.9
219 3	-0.2792	-0.1891	0.0609	-0.1891	-0.0641	-0.0016	0.3088	0.0296	9.4
220 1	0.6507	0.6095	0.3535	0.1035	-0.0153	0.0470	-0.6349	0.0158	41.2
220 2	0.6336	0.2617	0.1117	-0.1383	-0.0132	0.0492	-0.6157	0.0179	35.4
220 3	-0.1340	0.1748	-0.0752	0.1748	0.0498	-0.0127	0.1525	0.0185	7.2
221 1	-0.3141	-0.1141	0.1299	-0.1141	0.0109	-0.0316	0.2938	-0.0204	13.4
221 2	-0.0350	0.1447	-0.1053	0.1447	0.0197	-0.0428	0.0235	-0.0116	3.0
221 3	0.1035	-0.1367	0.1167	-0.1367	-0.0117	0.0509	-0.0899	0.0196	5.3

FIG. 14(b)

094535Z 120999

-30 dB 200 Trials

Phase Mult every 4 times

Normalized APEX data

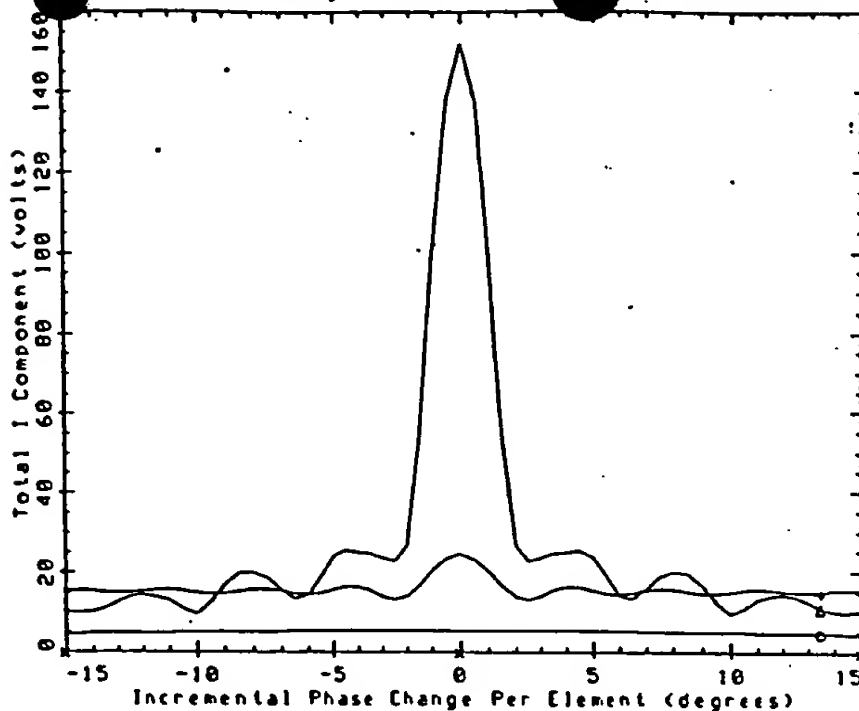


FIG. 15(a)

21 Real Elements

Norm APEX Array

-40 dB 200 Trials

Phase Mult every 4 times

Normalized APEX data

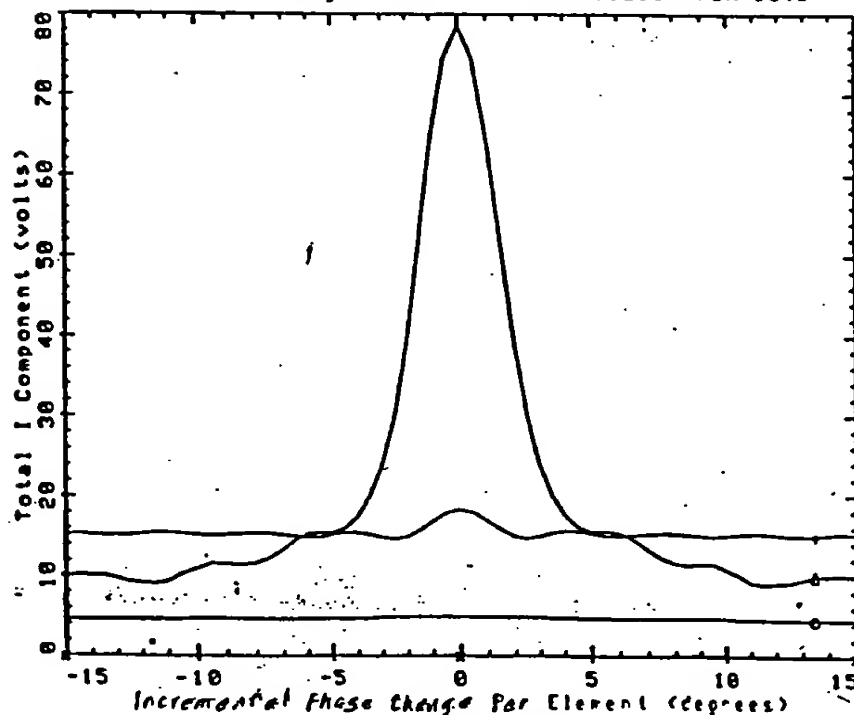
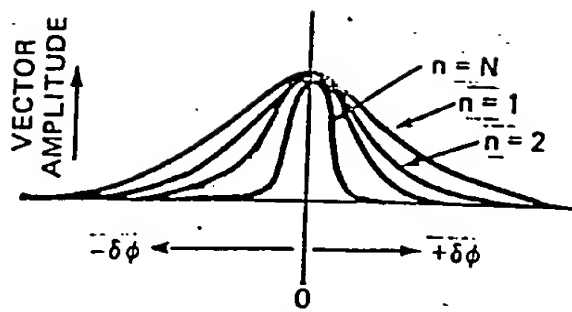


FIG. 15(b)

210 Real Elements

FIG 15 ILLUSTRATION OF COMPARITIVE IMPROVEMENT



CHANNEL PHASE DISPERSION
AS FUNCTION OF n
FIG. 16(a)

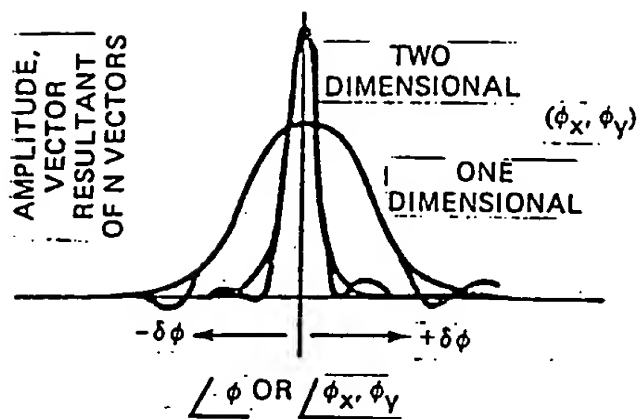
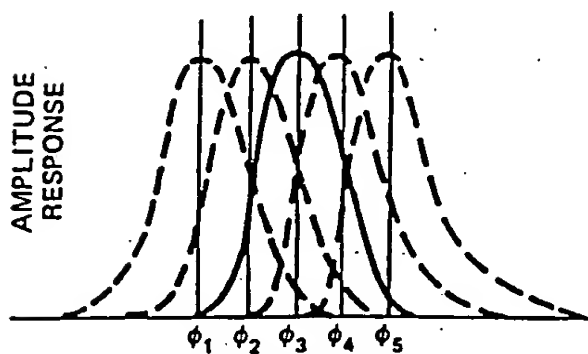


FIG. 16(b)



CONTIGUOUS PHASE GATES
FIG. 16(c)

FIG 16 PHASE GATE OPTIONS

66E02T" 925E5460

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☒ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER: _____**

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.